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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/892,307	06/26/2001	Teng Xu	2001B068	2337

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EXAMINER

DANG, THUAN D

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 10/07/2002

7

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/892,307

Applicant(s)

XU ET AL.

Examiner

Thuan D. Dang

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: \_\_\_\_\_

Art Unit: 1764

## **DETAILED ACTION**

### ***Election/Restrictions***

The cancellation of non-elected claims 20 and 21 as requested in the response paper filed on 8/26/2002 is acknowledged by the examiner.

### ***Information Disclosure Statement***

The copy of the I.D.S. form filed on 3/25/2002 having been considered by the examiner is enclosed in this Office action.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 16, it is unclear if “silicoaluminophosphate” is an additional component of the catalyst other than the Ga-containing molecular sieve or the silicoaluminophosphate is the molecular sieve containing Ga in the framework.

Regarding claim 17, the expression “being capable of alkylation” is indefinite since it is unclear if the aromatic compound is alkylated during the process or not.

Art Unit: 1764

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Pieters et al (4,638,106).

Pieters et al disclose a conversion process including a step of contacting an oxygenate feed such as methanol and an aromatic cofeed such as xylenes in the presence of a zeolite such as ZSM-5 having Gallium in the framework as called for in claims 1-7 (the abstract; col. 8, lines 63-68; col. 9, line 65-67; col. 10, lines 46-50; col. 11, lines 28-45; col. 16, lines 34-45).

The mole ratio of oxygenate and aromatic as called for in claim 8 can be found on column 16, lines 59-66.

The condition of the conversion as called for in claims 9 and 10 can be found on column 17, lines 51-68.

The ratio of ethylene and propylene in the product as called for in claims 11 and 12 as expected can be found on table 1 on column 21 and 22.

***Claim Rejections - 35 USC § 102/103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1764

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 17 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Pieters et al (4,638,106).

Pieters discloses a process as discussed above.

Pieters discloses a process pressure of about 1 atmosphere on column 17, line 66.

Pieters also discloses what is contained in the feed of the conversion reactor (see the whole patent to Pieters for details).

Art Unit: 1764

With a calculation, the partial pressure of the oxygenate feed of the prior art pressure must be greater than 6.9 kPa.

Pieters does not clearly disclose that aromatic such as toluene, xylene, and benzene is alkylated. However, according to the teachings of Pieters as discussed above, these aromatics must inherently be alkylated due to the similarities between the process of Pieters and of applicants.

### ***Claim Rejections - 35 USC § 103***

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pieters et al (4,638,106) in view of Lewis et al (4,861,938).

Pieters discloses a process as discussed above.

Pieters does not disclose that silicoaluminophosphate is also included in the catalyst (see the entire patent to Pieters for details). However, Lewis discloses using silicoaluminophosphate to catalyze the conversion of oxygenates to olefins (the abstract; col. 19, lines 26-37; col. 20, lines 10-33).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Pieters process by using a mixture of the Lewis silicoaluminophosphates and the Pieters catalyst to catalyze the oxygenate conversion since it is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition which to be used for the very same purpose. *In re Kerkhoven*, 205 USPQ 1069 (CCPA 1980).

Art Unit: 1764

Claims 13-15, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pieters et al (4,638,106) in view of Verduijn et al (6,150,293).

Pieters et al does not disclose using a zeolite bound zeolite catalyst as called for in claims 1-15, 18, and 19. However, as taught by Verduijn, a similar catalyst can be used for converting oxygenates to olefins (the abstract; col. 5, lines 10-30; col. 9, section (u)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Pieters process by using the Verduijn zeolite bound zeolite catalyst since the Verduijn catalyst has good strength and integrity (the abstract).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan D. Dang whose telephone number is 703-305-2658. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marian Knode can be reached on 703-308-4311. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-5408 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Thuan D. Dang  
Primary Examiner  
Art Unit 1764

91892307.1st  
October 1, 2002

